

Geometry, dynamics and physics:  
100th Encounter between Mathematicians and  
Theoretical Physicists  
Institut de Recherche Mathématique Avancée  
(University of Strasbourg and CNRS)  
September 7–9, 2017

Organisation: Norbert A'Campo, Athanase Papadopoulos,  
and Sumio Yamada

**Program**

**Thursday, September 7, Morning**

- 9h00-9h10 : Opening word
- 9h10-10h00 : Daniel Bennequin (Univ. Paris, Jussieu): A geometric explanation of the standard model structure
- 10h00-10h50 : Klaus Schmidt (ESI, Vienna): Entropy and periodic points of algebraic actions of discrete groups
- 10h50-11h10: Coffee break
- 11h10-12h : Wendelin Werner (ETH, Zürich): Conformal loop ensembles on Liouville quantum gravity
- 12h-12h50 : Marc Rosso (Univ. Paris, Jussieu): TBA

**Thursday, September 7, Afternoon**

- 14h30-15h20 Jürgen Jost (MPI Leipzig): From harmonic mappings to the nonlinear supersymmetric sigma model. A challenge from QFT for Geometric Analysis.
- 15h20-15h40: Coffee break
- 15h40-16h30 Catherine Meusburger (Univ. Erlangen): Ideal tetrahedra and their duals in 3d gravity

- 16h30-17h20 Gabriele Mondello (Univ. Rome 1): On the existence of spherical metrics with conical points

- 19h30: Conference Dinner at the restaurant “Le Petit Bois Vert”, 2 Quai de la Bruche (Petite France). Everybody is invited.

### **Friday, September 8, Morning**

- 9h-9h50 Basilis Gidas (Brown Univ.): Towards a Probabilistic/Combinatorics Framework for Cognition and Biology

- 9h50-10h40 : Robert C. Penner (IHES): Theory of Morphogenesis

- 10h40-11h: Coffee Break

- 11h-11h50 : Alberto Cattaneo (Univ. Zurich): Geometrical construction of reduced phase spaces

- 11h50-12h40 : Pavel Mnev (Univ. Notre Dame): Cellular BV-BFV-BF theory

### **Friday, September 8, Afternoon**

- 14h30-15h20 Yvan Velenik (Univ. Geneva): Ornstein-Zernike theory of Ising and Potts models: a review of some applications

- 15h20-15h40: Coffee break

- 15h40-16h30 Stanislav Smirnov (Univ. Geneva): Integrability in 2D lattice models, CFT and SLE

- 16h30-17h20 Toshikazu Sunada (Meiji Univ. Tokyo): Crystallographic Tight Frames

- 17:30-19h30 Reception

### **Saturday September 9, Morning**

- 9h-9h50 : Anish Ghosh (Tata Institute Bombay): Quadratic forms and ergodic theory

- 9h50-10h40 : Oscar Garcia Prada (ICMAT, Madrid): Kaehler-Yang-Mills equations and gravitating vortices bundles

- 10h40-11h: Coffee break

- 11h-11h50: Hubert Goenner (Univ. Goettingen): Cartan and his contributions to theoretical physics

- 11h50-12h40: Sorin Dumitrescu (Univ. Nice): Cartan geometries on compact manifolds

- 12h40: Apéritif